CITY OF NEWTON
CONTRIBUTORY RETIREMENT SYSTEM

Actuarial Valuation Report

January 1, 2009

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Report Summary:

Highlights	**January 1, 2008**	**January 1, 2009**
Contributions		
Funding Schedule FY 2010	$13,547,778	$13,547,778
Funding Schedule FY 2011	14,044,239	15,029,827
Funded Ratios		
GAS No. 25	67.1%	56.9%
Participants		
Actives	1,764	1,740
Retirees and Beneficiaries	1,143	1,134
Inactives	591	562
Disabled	149	147
Total	3,647	3,583
Payroll		
Payroll of Active Members	$79,205,738	$82,013,624
Average Payroll	44,901	47,134
Normal Cost		
Employer	3,063,306	3,136,792
Employee	6,457,363	6,745,990
Total	9,520,669	9,882,782
Actuarial Accrued Liabilities		
Actives	183,332,121	201,310,860
Retirees, Beneficiaries, Disabilities and Inactives	232,368,463	241,698,747
Total	419,000,697	443,009,607
Actuarial Value of Assets	281,114,591	252,116,922
Unfunded Actuarial Accrued Liabilities	$137,886,106	$190,892,685

Introduction

This report presents the findings of an actuarial valuation as of January 1, 2009, of Newton Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2009.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the City of Newton Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2009 and January 1, 2008, respectively.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

The Board decided to adopt a new funding schedule beginning with FYE11 based on the 2008 actuarial valuation. This report presents all asset and liability values as of January 1, 2009.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last year, the total unfunded actuarial accrued liability increased by 38.4% to $190,892,685. The increase was much larger than expected as a of result of net unfavorable actuarial experience during the preceding year. The actuarial value of assets for 2008 had a return of -11.67%. The sources of the (gain)/loss are as follows:

Investment	44,564,894
Salary Increases	1,706,819
New Participants	1,851,215
Active - Retirements	(1,549,706)
Active - Terminations	560,949
Active - Mortality	351,285
Active - Disabilities	(334,271)
Inactive - Mortality and data adjustments	50,155
Contribution Gain	(1,586,543)
Other	6,135,449
Total (gain)/loss	51,750,246

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Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	January 1, 2008	January 1, 2009
Superannuation	$6,855,718	$6,702,926
Termination	1,241,503	1,351,747
Death	427,196	433,523
Disability	996,252	1,394,586
Total Normal Cost	9,520,669	9,882,782
% of Pay	12.0%	12.1%
Employee Contributions	6,457,363	6,745,990
% of Pay	8.2%	8.2%
Employer Normal Cost	$3,063,306	$3,136,792
% of Pay	3.9%	3.8%

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Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits based on the past service of the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	January 1, 2008	January 1, 2009
Actives		
Superannuations	$173,364,354	$188,982,940
Termination	(2,743,827)	(3,333,119)
Death	4,295,527	4,602,792
Disability	8,416,067	11,058,247
Retirees and Inactives		
Retirees and Beneficiaries	185,271,031	189,815,691
Terminated (Refund)	3,300,113	3,217,906
Disabled	47,097,432	48,665,150
Total	$419,000,697	$443,009,607

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Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	January 1, 2008	January 1, 2009
Actives		
Superannuation	$232,873,013	$247,845,896
Termination	7,845,970	8,138,835
Death	7,929,107	8,285,546
Disability	18,328,470	24,965,855
Retirees and Inactives		
Retirees and Beneficiaries	185,271,031	189,815,691
Terminated (Refund)	3,300,113	3,217,906
Disabled	47,097,432	48,665,150
Total	$502,645,136	$530,934,879

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	January 1, 2008	January 1, 2009
Cash equivalents	$2,755,828	$4,266,196
Real Estate	13,924,762	13,074,523
PRIT Core Fund	270,587,597	184,034,610
Accounts receivable	378,230	381,435
Accounts payable	(29,752)	(63,227)
Accrued income	0	0
Total Market Value	$287,616,666	$201,693,537
Total Actuarial Value	$281,114,591	$252,116,922

Actuarial Value of Assets

For actuarial purposes, the assets are valued using a method which reflects the market value of assets though gradual recognition of any unrealized appreciation or depreciation in assets beyond the 8% return. The following table shows the development of valuation assets:

(1)	Assets for valuation purposes, January 1, 2008	$281,114,591
(2)	Cash flow during year without regard to investment income and expenses	
	(a) Benefit payouts and refunds	($28,168,669)
	(b) City contributions	$12,674,496
	(c) Member contributions	$7,775,450
	(d) Net transfers and reimbursements	$1,063,009
	(e) Net cash flow	($6,655,715)
(3)	Expected investment income and expenses	$22,222,939
(4)	Preliminary Asset Value (1 + 2 + 3)	$296,681,815
(5)	Market value, January 1, 2009	$201,693,537
(6)	Preliminary asset value	$296,681,815
(7)	Unrecognized appreciation (5 - 6)	($94,988,278)
(8)	Adjustment (7 x 25%)	($23,747,069)
(9)	Adjusted asset value (4 + 8)	$272,934,746
(10)	Assets for valuation purposes, January 1, 2009 (adjusted asset value limited to 120% of market value of assets)	$252,116,922
(11)	Ratio of actuarial value to market value	125.0%
(12)	The investment rate of return for year ending, January 1, 2009 (based on the adjusted asset value)	-8.04%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	January 1, 2008	January 1, 2009
Actuarial Accrued Liability	$419,000,697	$443,009,607
Actuarial Assets	281,114,591	252,116,922
Unfunded Actuarial Accrued Liability	$137,886,106	$190,892,685
Funded Status	67.1%	56.9%

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Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the prior unfunded actuarial accrued liability by June 30, 2026
  $ 137,886,106 over 17 years with 4.5% increasing payments
- Interest adjustment for payments deposited semiannually.

The pension appropriation is based on the 2008 actuarial valuation and is shown in Table VII.

Table VII

	January 1, 2008	January 1, 2009
Normal cost	$3,063,306	$3,136,792
Amortization payment of the prior accrued liability	9,989,332	14,426,424
Total cost	$13,052,638	$17,563,216
% of Pay	16.5%	21.4%
Fiscal 2010 cost	$13,547,778	$13,547,778
Fiscal 2011 cost	$14,044,239	$15,029,827

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule. The funding schedule is based on the 2008 actuarial valuation.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 16 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total FYE11 cost represents 17.4% of payroll, decreasing to 15.4% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 1.6% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

Appropriation Forecast

Fiscal Year Ending	Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2009	$79,205,738	$6,457,363	$3,244,724	$9,598,910	$12,843,634	16.2	67.1
2010	$82,769,996	$6,850,203	$3,282,423	$10,265,355	$13,547,778	16.4	68.1
2011	$86,494,646	$7,265,321	$3,316,943	$11,712,884	$15,029,827	17.4	69.3
2012	$90,386,905	$7,703,929	$3,347,924	$12,239,964	$15,587,888	17.2	70.4
2013	$94,454,316	$8,167,300	$3,374,976	$12,790,762	$16,165,738	17.1	71.6
2014	$98,704,760	$8,656,773	$3,397,683	$13,366,347	$16,764,030	17.0	72.9
2015	$103,146,474	$9,173,760	$3,415,600	$13,967,832	$17,383,432	16.9	74.3
2016	$107,788,066	$9,719,746	$3,428,249	$14,596,385	$18,024,634	16.7	75.8
2017	$112,638,529	$10,296,294	$3,435,119	$15,253,222	$18,688,341	16.6	77.4
2018	$117,707,262	$10,905,048	$3,435,666	$15,939,617	$19,375,283	16.5	79.1
2019	$123,004,089	$11,547,741	$3,429,306	$16,656,900	$20,086,206	16.3	80.9
2020	$128,539,273	$12,226,193	$3,415,416	$17,406,460	$20,821,876	16.2	82.9
2021	$134,323,540	$12,942,322	$3,393,331	$18,189,751	$21,583,082	16.1	84.9
2022	$140,368,100	$13,698,144	$3,362,343	$19,008,290	$22,370,633	15.9	87.1
2023	$146,684,664	$14,495,782	$3,321,694	$19,863,663	$23,185,357	15.8	89.5
2024	$153,285,474	$15,337,469	$3,270,579	$20,757,528	$24,028,107	15.7	91.9
2025	$160,183,320	$16,225,553	$3,208,136	$21,691,616	$24,899,752	15.5	94.5
2026	$167,391,570	$17,162,507	$3,133,451	$22,667,739	$25,801,190	15.4	97.2
2027	$174,924,191	$18,150,930	$3,045,547	$0	$3,045,547	1.7	100.0
2028	$182,795,779	$19,193,557	$2,943,387	$0	$2,943,387	1.6	100.0
2029	$191,021,589	$20,057,267	$3,075,840	$0	$3,075,840	1.6	100.0
2030	$199,617,561	$20,959,844	$3,214,253	$0	$3,214,253	1.6	100.0
2031	$208,600,351	$21,903,037	$3,358,894	$0	$3,358,894	1.6	100.0
2032	$217,987,367	$22,888,674	$3,510,044	$0	$3,510,044	1.6	100.0
2033	$227,796,798	$23,918,664	$3,667,996	$0	$3,667,996	1.6	100.0
2034	$238,047,654	$24,995,004	$3,833,056	$0	$3,833,056	1.6	100.0
2035	$248,759,799	$26,119,779	$4,005,544	$0	$4,005,544	1.6	100.0
2036	$259,953,990	$27,295,169	$4,185,793	$0	$4,185,793	1.6	100.0
2037	$271,651,919	$28,523,451	$4,374,154	$0	$4,374,154	1.6	100.0
2038	$283,876,255	$29,807,007	$4,570,991	$0	$4,570,991	1.6	100.0
2039	$296,650,687	$31,148,322	$4,776,685	$0	$4,776,685	1.6	100.0
2040	$309,999,968	$32,549,997	$4,991,636	$0	$4,991,636	1.6	100.0

* Calendar basis

** Beginning of Fiscal Year

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GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to $0. The required disclosure information is shown in Table VIII.

Table VIII

		January 1, 2008	January 1, 2009
(1)	Actuarial Accrued Liability	$419,000,697	$443,009,607
(2)	Actuarial Value of Assets	281,114,591	252,116,922
(3)	Unfunded Actuarial Accrued Liability	137,886,106	190,892,685
(4)	Funded Ratio (2)/(1)	67.1%	56.9%
(5)	Covered Payroll	$79,205,738	$82,013,624
(6)	UAAL as a percentage of payroll: (3)/(5)	174.1%	232.8%
(7)	Annual Required Contribution (ARC)	$12,843,634	$13,547,778
(8)	Net Pension Obligation	$0	$0

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PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Buck Consultants as of January 1, 2009.

The normal cost for employees on that date was:	$6,745,990	8.2% of pay
The normal cost for the employer was:	3,136,792	3.8% of pay

The actuarial liability for active members was:	$201,310,860
The actuarial liability for retired and inactive members was:	241,698,747
Total actuarial accrued liability:	443,009,607
System assets as of that date:	252,116,922
Unfunded actuarial accrued liability:	$190,892,685

The ratio of system's assets to total actuarial liability was 56.9%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.0%
Ultimate Rate of Salary Increase:for Groups 1 & 4	4.75% and 5.25%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/09	$252,116,922	$443,009,607	$190,892,685	56.9%	$82,013,624	232.8%
01/01/08	281,114,591	419,000,697	137,886,106	67.1%	79,205,738	174.1%
01/01/07	265,700,539	402,257,645	136,557,106	66.1%	74,197,265	184.0%
01/01/06	253,420,995	382,732,277	129,311,282	66.2%	71,278,135	181.4%
01/01/05	244,266,000	361,080,000	116,814,000	67.6%	69,702,000	168.0%
01/01/04	233,888,000	350,688,000	116,800,000	66.7%	68,327,000	171.0%
01/01/03	227,126,000	338,172,000	111,046,000	67.2%	64,636,000	172.0%
01/01/02	228,239,000	306,123,000	77,884,000	74.6%	61,438,000	127.0%
01/01/01	219,102,000	268,660,000	49,558,000	81.6%	60,769,000	82.0%
01/01/00	201,766,000	256,096,000	54,330,000	78.8%	54,975,000	99.0%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2009

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
20-24	57	0	0	0	0	0	0	0	0	57
	23,316	0	0	0	0	0	0	0	0	23,316
25-29	208	13	0	0	0	0	0	0	0	221
	33,190	43,129	0	0	0	0	0	0	0	33,774
30-34	100	58	5	0	0	0	0	0	0	163
	40,075	52,217	64,181	0	0	0	0	0	0	45,135
35-39	50	53	25	2	0	0	0	0	0	130
	41,343	54,979	60,833	43,210	0	0	0	0	0	50,679
40-44	41	45	39	16	10	0	0	0	0	151
	32,653	51,594	60,308	56,724	56,676	0	0	0	0	49,582
45-49	51	41	33	21	43	9	0	0	0	198
	37,054	40,426	52,399	67,839	58,118	71,634	0	0	0	49,721
50-54	52	53	29	20	58	38	11	1	0	262
	35,035	39,809	51,252	61,076	59,533	71,673	70,898	40,203	0	52,046
55-59	34	52	34	22	34	23	32	20	0	251
	37,677	40,540	48,746	51,298	57,673	70,753	63,834	59,416	0	51,770
60-64	25	26	33	27	20	17	24	27	8	207
	37,791	39,875	49,649	44,131	50,570	60,436	66,642	78,330	52,364	53,060
65-69	7	12	12	8	19	6	6	0	1	71
	32,343	49,044	31,414	39,903	45,876	40,743	62,097	0	49,754	42,952
70+	0	1	4	4	5	5	3	1	6	29
	0	5,110	46,102	54,026	40,781	43,416	35,413	40,010	51,210	44,142
Total Employees	625	354	214	120	189	98	76	49	15	1,740
Average Salary	34,896	46,132	52,647	54,130	55,908	66,169	64,484	69,050	51,728	47,134

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Retiree Distribution as of January 1, 2009

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	0	1	7575	0	7575
40-44	0	2	2	0	12,554	12,554
45-49	1	2	3	5,434	26,612	32,046
50-54	6	4	10	159,028	45,264	204,292
55-59	28	20	48	850,850	376,165	1,227,015
60-64	82	59	141	2,952,462	1,054,903	4,007,366
65-69	93	64	157	3,115,112	943,441	4,058,553
70-74	80	97	177	2,508,613	1,708,095	4,216,708
75-79	71	95	166	1,804,217	1,319,576	3,123,794
80-84	100	118	218	2,100,170	1,521,567	3,621,738
85-89	32	111	143	538,226	1,136,093	1,674,318
90-94	10	39	49	164,777	348,899	513,676
95-99	1	18	19	6,056	148,498	154,554
Total	505	629	1134	14,212,520	8,641,668	22,854,188
Average (Age/Payment)	72.7	77.4	75.3	28,144	13,739	20,154
Frequency Percent	44.5	55.5	100	62.2	37.8	100

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Disabled Retiree Distribution as of January 1, 2009

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	0	1	47,665	0	47,665
40-44	2	0	2	61,895	0	61,895
45-49	4	4	8	142,930	113,302	256,232
50-54	10	3	13	374,715	78,317	453,032
55-59	16	2	18	537,025	62,030	599,056
60-64	33	1	34	1,239,474	23,559	1,263,033
65-69	21	1	22	806,346	37,891	844,237
70-74	22	3	25	623,732	70,841	694,573
75-79	13	2	15	285,851	38,244	324,095
80-84	8	0	8	165,621	0	165,621
85-89	1	0	1	23,168	0	23,168
90-94	1	0	1	16,911	0	16,911
95-99	0	0	0	0	0	0
Total	132	16	148	4,325,332	424,183	4,749,516
Average (Age/Payment)	65.8	60.1	65.2	32,768	26,511	32,091
Frequency Percent	89.2	10.8	100	91.1	8.9	100

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2009	$29,369,033	$6,457,363	$12,843,634	$25,305,154	$15,237,118
2010	30,958,616	6,850,203	13,547,778	26,984,324	16,423,690
2011	32,485,987	7,265,321	15,029,827	27,599,711	17,408,873
2012	34,008,437	7,703,929	15,587,888	29,251,462	18,534,842
2013	35,444,112	8,167,300	16,165,738	31,011,569	19,900,495
2014	36,834,103	8,656,773	16,764,030	32,898,285	21,484,985
2015	38,191,203	9,173,760	17,383,432	34,929,343	23,295,332
2016	39,528,709	9,719,746	18,024,634	37,123,047	25,338,718
2017	40,809,141	10,296,294	18,688,341	39,500,307	27,675,801
2018	42,062,228	10,905,048	19,375,283	42,084,282	30,302,385
2019	43,260,929	11,547,741	20,086,206	44,900,064	33,273,081
2020	44,397,022	12,226,193	20,821,876	47,976,414	36,627,462
2021	45,383,165	12,942,322	21,583,082	51,348,409	40,490,648
2022	46,292,278	13,698,144	22,370,633	55,054,886	44,831,385
2023	47,016,735	14,495,782	23,185,357	59,139,318	49,803,722
2024	47,720,422	15,337,469	24,028,107	63,646,894	55,292,048
2025	48,397,931	16,225,553	24,899,752	68,620,250	61,347,624
2026	49,024,571	17,162,507	25,801,190	40,301,560	34,240,686
2027	49,614,047	18,150,930	3,045,547	65,815,823	37,398,253
2028	50,052,885	19,193,557	2,943,387	69,166,928	41,250,987
2029	50,509,626	20,057,267	3,075,840	72,585,213	45,208,694
2030	50,891,781	20,959,844	3,214,253	76,329,167	49,611,483
2031	51,124,780	21,903,037	3,358,894	80,437,597	54,574,748
2032	51,351,220	22,888,674	3,510,044	84,950,035	59,997,533
2033	51,440,968	23,918,664	3,667,996	89,908,649	66,054,341
2034	51,476,646	24,995,004	3,833,056	95,361,232	72,712,646
2035	51,483,393	26,119,779	4,005,544	101,355,249	79,997,179
2036	51,539,105	27,295,169	4,185,793	107,938,086	87,879,943
2037	51,374,912	28,523,451	4,374,154	115,168,505	96,691,198
2038	53,099,240	29,807,007	4,570,991	123,038,450	104,317,207

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2009, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

(i) Group 1: Most general employees in State and local government

(ii) Group 2: Certain specified hazardous duty positions

(iii) Group 3: State police officers and inspectors

(iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. Salary

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

Date of Hire	Member Contribution Rate
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of $30,000

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. Creditable Service

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

(i) completion of 20 years of service

(ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member

(iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

Age at Retirement	Percentage of Average Salary Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

8. <u>Deferred Vested Retirement</u>

a. <u>Eligibility</u>:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. <u>Benefit Amount</u>:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. <u>Refund of Contributions</u>:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. <u>Accidental Disability</u>

a. <u>Eligibility</u>:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. <u>Benefit Amount</u>:

The accidental disability amount is 72% of annual salary plus $648.48 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of $250 per month to the surviving spouse, plus $120 for the first child, plus $90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of $250 per month plus $120 for the first child and $90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is $12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

(i) Option A - Life annuity

(ii) Option B - Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member

(iii) Option C - Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. <u>Member Data</u>

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. <u>Valuation Date</u>

January 1, 2009.

3. <u>Actuarial Cost Method</u>

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. <u>Rate of Investment Return</u>

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.0% per annum.

5. <u>Salary Scale</u>

It is assumed that salaries including longevity will increase at of 4% per year from 2009 to 2012. Starting in 2013 the annual increases will be 4.75% and 5.25% for groups 1 and 4, respectively.

6. <u>Cost-of-Living Increases</u>

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and $12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). Actuarial assets equal preliminary asset value plus 25% of the difference between market value and preliminary asset value. Preliminary asset value is the previous years' actuarial asset amount increased by net cash flow and expected investment income. The result must be within 20% of market value.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

Service	General Employees	Police and Fire Employees
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

Age	Male General Employees	Female General Employees	Male and Female Police and Fire Employees
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

Attained Age	General Employees	Police and Fire Employees
20	0.0001	0.0010
30	0.0003	0.0030
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

No provision is made for anticipated administrative expenses.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the City of Newton Retirement System contributing as of January 1, 2009, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Buck Consultants, LLC

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Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 08-4086

December 2009

BREAKOUTS

FY2011

Breakouts

Code	Department	Participants	Payroll	Normal Cost	Amortization of Unfunded Liability	FYE 2011 Appropriation	
001	M.I.S.	7	$ 565,173	$ 7,756	$ 70,771	$ 78,527	
002	Personnel	8	571,087	19,394	83,371	102,765	
003	Human Services	7	432,506	16,111	69,817	85,928	
005	Jackson Homestead	4	191,563	10,299	10,372	20,671	
006	Executive	6	571,052	5,309	110,452	115,761	
007	Comptroller	6	428,484	10,091	91,111	101,202	
008	Retirement	2	175,808	$ (1,818)	27,188	25,370	
009	Assessing	14	993,118	17,472	148,439	165,911	
010	Purchasing	5	266,391	8,132	62,642	70,774	
011	Treasury	7	353,064	20,366	62,506	82,872	
012	Law	10	875,412	7,009	123,160	130,169	
013	City Clerk	5	287,031	7,659	25,265	32,924	
014	Clerk of the Board	5	287,375	9,678	58,006	67,684	
015	Board of Aldermen	21	217,907	15,788	24,426	40,214	
016	Building (Group 1)	20	1,198,332	27,376	252,743	280,119	
016	Building (Group 2 & 4)	4	207,219	18,281	10,715	28,996	
017	Elections	6	351,656	2,636	89,106	91,742	
018	Planning	12	727,619	15,991	89,466	105,457	
018F	Community Development	12	769,524	13,188	103,297	116,485	
018P	Community Preservation	1	78,752	5,995	426	6,421	
019	Fire (Group 1)	1	59,131	268	2,782	3,050	
019	Fire (Group 2 & 4)	179	11,563,440	880,283	2,149,811	3,030,094	
019A	Fire - Civilian Personnel	5	280,446	2,289	54,013	56,302	
020	Police (Group 2 & 4)	137	10,332,561	700,722	2,026,581	2,727,303	COMBINE
020	Police (Group 1)	0	$ -	$ -	5,010	5,010	
022	Other	0	$ -	$ -	5,428	5,428	— ADD TO 026

Breakouts

Code	Department	Participants	Payroll	Normal Cost	Amortization of Unfunded Liability	FYE 2011 Appropriation
020A	Police - Civilian Personnel (Group 1)	27	$ 1,481,913	$ 7,843	$ 140,738	$ 148,581
021	Police School Traffic Supervisors	16	536,356	19,783	147,578	167,361
023	Inspectional Services (Group 1)	9	627,299	21,603	104,119	125,722
023	Inspectional Services (Group 2 & 4)	2	136,944	8,157	28,224	36,381
025	Health	40	2,133,506	90,872	238,505	329,377
026	Veterans	3	207,106	7,106	31,788	38,894
027	Library	66	3,083,959	102,307	437,407	539,714
028	School Custodian	84	4,197,510	113,177	740,205	853,382
029	School Cafeteria	76	1,461,433	81,413	157,029	238,442
030	School Teacher Aides	554	15,872,623	450,409	583,387	1,033,796
031	School Clerical	123	7,005,234	260,892	998,815	1,259,707
031A	School Committee	3	14,625	1,177	2,548	3,725
032	Recreation	32	1,913,639	40,897	448,655	489,552
032A	Recreation - Judy Anderson	1	51,733	$ -	5,909	5,909
033	Engineering	14	1,030,165	21,807	198,087	219,894
034	Public Works	115	5,796,886	172,907	1,164,196	1,337,103
034A	Storm Water Management	5	256,892	5,172	31,007	36,179
034B	Man Highway Crew	6	246,295	3,777	2,006	5,783
035	Water/Sewer	17	943,485	22,294	116,759	139,053
035S	Sewer Personnel	24	1,104,788	19,027	159,197	178,224
035W	Water Personnel	21	971,332	26,326	84,330	110,656
036	Newton Housing Authority	18	1,155,250	19,722	135,491	155,213
	TOTAL	1,740	$ 82,013,624	$ 3,316,943	$ 11,712,884	$ 15,029,827